

## Letter from W. J. McGee to Alexander Graham Bell, October 6, 1902

SMITHSONIAN INSTITUTION "M" a BUREAU OF AMERICAN ETHNOLOGY  
WASHINGTON, October 6, 1902. My dear Dr Bell:

You will, I am sure, make allowances for my delay in offering definite suggestions concerning your unit figure and the novel concept involved therein.

My first line of thought was represented by the Greek stereos (in this as in other cases I give the English transliteration only), as denoting volume. A legitimate descriptive compound expressing the figure would be stereotetrorthopipedon — which is of course impossible practically. It would be possible by free elision, coupled with clear definition, to reduce this to stereon, which would accordingly become the designation of your unit figure; and from this you could proceed to stereotecture, stereometry, stereography, stereology, stereology or stereonomy, etc.

Finding that stereon connotes not mere volume but solidity or mass, which is in reality antithetic to your principle, I tried strength, rigidity, etc., developing from the Greek sthenos. By definition this term might be made equally applicable with the last, and the compound forms might be similarly developed; but the unit term sthenon, like the compounds, 2 would be awkward.

Turning to terms homologous with triangle, I obtained trion, trian, etc., with little violence to the classics; but even these, simple as they are, seem hardly satisfactory.

Turning then to strictly geometric terminology, I find that your unit is a regular tetrahedron, or tetrorthohedron; and the latter term would be quite legitimate though too clumsy for use in the shops and highways. By an elision which I think admissible, the term might be

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reduced to tetron (finding some analogy in tetrant, tetrinic, tetrol, tetroxid, etc.). It strikes me that this term is not only sufficiently legitimate for all purposes, but sufficiently simple phonetically to meet practical requirements. Of course my idea is that it would serve as the common designation for your structural unit. Systematically it might be extended into tetroecture (preferable to tetron o tecture), tetronometry, tetronology, etc. In the shop it might also be combined into tetron-nut or, better, tetronut, together with tetrobar, etc., for the structural elements.

One of the best legitimate combinations I have found is derived from the Greek oxu, the vertex of a triangle, which with the term for four becomes tetroxu, or, by elision, tetrox. Using this as your basis, tetroxotecture, tetroxometry, etc., might be developed. Unfortunately the term is bad phonetically; 3 but the analogy is sufficiently close with tetron as to give some support for that form.

I have tried various other roots for winged, soaring, kite, rigidity, etc., but without useful results. I have been greatly helped by Mr J. N. B. Hewitt, of this Office.

Since returning to Washington I have at intervals cast about for examples in Nature of the regular tetrahedron. I find none; tetrahedrite (fahlore), blende, nitrate of lead, and a variety of garnet, approach the form, while the blood of the guinea-pig on drying crystallizes in approximate tetrahedra; but in all these cases the form seems to be more or less irregular, and usually twinned in such manner as to yield a form approached by that of beech-nut and buckwheat. In short, my further search has only served to strengthen my feeling that the unit form is unique, not a product of Nature, and one of the most distinctive expressions of the artificial within the field of my knowledge.

Trusting that the suggestions may be of interest if not of value, and begging to be most kindly remembered to Mrs Bell and others of your family, I remain, with great respect,

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Yours cordially, Dr Alexander Graham Bell, Baddeck, Cape Breton, Nova Scotia.